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# *Forest & Shade Tree - Insect & Disease Conditions for Maine*
# *May 15, 2008*

The development of most forest and shade tree insect pests and diseases is strongly regulated by weather conditions. Cool, wet weather favors leaf and needle diseases, but also may slow the development of certain insects, or may even contribute to their early mortality. Excessively dry spring weather can stress trees during their critical developmental period, and increase their susceptibility and vulnerability to all pests.

This spring season has been just slightly cooler than normal, and it has also been relatively dry. Anthracnose leaf diseases of hardwoods, and conifer needle casts and blights are not expected to be particularly heavy this year. However, populations of some insect defoliators, such as the eastern tent caterpillar, may be on the upswing. Weather conditions can change quickly, so making accurate predictions of pest populations and damage is difficult. Mid- to late May and early June is a critical time to watch the weather closely and to be flexible with tree pest management strategies.

## *Guide to Pest Management for May*

Remember that this is just a guide and that conditions will vary. Information on any entry preceded by an (*) may be available on our website or can be requested by calling or writing to the Insect and Disease Laboratory, 50 Hospital Street, Augusta, Maine 04330-6514, Phone (207) 287-2431, Fax (207) 287-2432.

| Insect/Disease | Cultural Controls | Chemical Controls |
|---|---|---|
| *Balsam Gall Midge | | The tiny mosquito-like adults should emerge between now and early June. Populations are expected to be low in most areas but Christmas tree growers are urged to watch their plantations and be ready to treat with Diazinon or chlorpyrifos (Lorsban) if necessary as the new needles emerge and flatten. |
| Balsam Shootboring Sawfly | | Too late now for chemical control. |
| *Balsam Twig Aphid | | Last chance now for control in southern Maine. Control may be achieved using Diazinon or chlorpyrifos (Lorsban) in northern and eastern Maine as buds begin to break. |

| Insect/Disease | Cultural Controls | Chemical Controls |
|---|---|---|
| Balsam Woolly Adelgid | Rogue out and destroy infested stock from Christmas tree plantations and be sure that planting stock is from a clean source. In forested situations harvest ahead of mortality. | Esfenvalerate (Asana). Low population levels will render treatments unnecessary for most growers this year. |
| *Birch Leaf Miner | | Watch for black fly-like adults around the foliage from now through mid-June. Apply foliar treatment with carbaryl (Sevin) or acephate (Orthene) when small developing mines (seen as small translucent spots in the leaves) are evident. |
| *Browntail Moth | Avoid mowing or raking in infested areas to avoid stirring up the hazardous caterpillar hairs. Clip overwintering webs next winter. | Treatment against the caterpillar stage should be done now. Call for more information. **New regulations for spraying near water**. |
| *Gypsy Moth | Begin watching for larval activity this season. Tiny larvae frequently drift around on spring breezes. If found, be prepared to remove and destroy egg masses next fall. | Monitor populations now to determine whether or not control will be necessary. Treatment options include Bt, acephate (Orthene) and carbaryl (Sevin). |
| *Hemlock Looper | | Watch for tiny looper larvae with black heads in early June. Survey methods are available and should be done in early June for this season. Treat in late June if necessary with Bt. |
| *Hemlock Woolly Adelgid | Please contact us. | Please contact us. |
| Larch Casebearer | | Too late now for control. |
| *Mountain Ash Sawfly | Remove and destroy infested leaves early as egg pouches or tiny larvae appear in late May. | Treat older larvae with acephate (Orthene) or carbaryl (Sevin). |
| *Pine Shoot Beetle | Please contact us | Please contact us. |
| Rhizosphaera Needlecast of Spruce | | Chlorothalonil (Spectro 90 WDG) copper hydroxide (Kocide), or mancozeb (Protect T/O) when needles are +/- 0.5 inch long and again 10 days to two weeks later |
| Sphaeropsis (Diplodia) Tip Blight of 2 and 3 needle Pines | | Copper hydroxide (Kocide) or chlorathalonil (Spectro 90 WDG) shortly after budbreak and again 10 days to two weeks later. |

| Insect/Disease | Cultural Controls | Chemical Controls |
|---|---|---|
| *Viburnum Leaf Beetle | Prune off twigs with egg pockets on them before hatch (early- to mid-May). | Treat infested shrubs early (before the end of May) with acephate (Orthene), carbaryl (Sevin) or chlorpyrifos. |
| *Yellowheaded Spruce Sawfly | Small infestations may be controlled by hand picking larvae and dropping them into soapy water. | Watch for adults around foliage in late May and early June. Look for developing larvae in June and be prepared to treat with carbaryl (Sevin), chlorpyrifos (Lorsban) or spinosad (Success) if populations warrant. |
| Yellow Witches Broom of Balsam Fir | Prune brooms from Christmas trees, taking care to make pruning cuts below galls at the bases of brooms. | |

***NOTES**: These recommendations are not a substitute for pesticide labeling. Read the label before applying any pesticide. Pesticide recommendations are contingent on continued EPA and Maine Board of Pesticides Control registration and are subject to change. Other effective registered fungicides are available and marketed under other product names. No endorsement or the exclusion of similar products not mentioned by the Maine Forest Service is intended or implied. Ask your supplier for specifics, and always read the label of any product before applying on site.

Restricted-use pesticide may be purchased and used only by certified applicators. **Caution**: For your own protection and that of the environment, apply the pesticide only in strict accordance with label directions and precautions.

## ***INSECTS***

***Balsam Twig Aphid (***_Mindarus abietinus_) – Balsam twig aphid populations were low in the areas checked. Christmas tree growers who had a problem last year should check to see if there are aphids on their trees now. Take a dark piece of paper or cloth, hold it under the outer branches and beat the branches to dislodge the aphids. Look for the tiny, yellow nymphs. Do this twice in 15 trees. If there are more then 2 aphids/tree and you had a problem last year, consider treatment.

***Balsam Woolly Adelgid** (_Adelges piceae_) - The adelgid population is still low in most of Maine. The trunk phase of this insect has been found in northern Maine over the past year. It is more common to find the adelgids on the boles of mature trees that are growing inland than on the coast. In coastal Maine, adelgids are more often found on the branches of young and mature trees. Christmas tree growers should rogue out any fir showing swelling at branch nodes.

**Birch Casebearer** (_Coleophora serratella_) - Larvae are now out and feeding on expanding gray birch leaves in southern and central Maine. Populations are light in the areas checked.

***Birch Leafminer** (_Fenusa pusilla_) **-** Tiny developing mines, resembling translucent spots along the margins of the new leaves, have begun to appear in the southern half of the State and will likely show up by the end of the month in the north. Mines of another **white birch leafminer** (_Messa nana_) usually appear in June.

***Browntail Moth** (_Euproctis chrysorrhoea_**) -** Browntail moth larvae have emerged from their overwintering webs and are feeding on new foliage in the Bath/Topsham/Brunswick area. Very few browntail webs were

found outside this vicinity. People in the greater Portland area should check for larvae before having any treatments applied to trees.

For those with browntail larvae this is the time to plan chemical treatment of areas that have webs. (It is too late now to accomplish browntail control through web clipping). Pesticide application should be completed as soon as possible, before the caterpillars develop toxic hairs in early June. We strongly recommend hiring a licensed applicator to control this pest. Homeowners generally should not attempt control of the browntail moth with pesticides to avoid both environmental and personal health concerns. There are new restrictions on controlling browntail moth near water, so please check before spraying.

**Eastern Tent Caterpillar** (*Malacosoma americana*) – There are a few more webs of the eastern tent caterpillars this year and they are becoming noticeable. If you have a web in your crabapple or cherry tree you can simply remove the webs containing the caterpillars and place them in water with a squirt of dishwashing detergent or use a Bt product. Either approach will kill the caterpillars, but do not consider burning them out because this process will result in more injury to the tree than the caterpillars could ever cause.

***Fall Cankerworm** (*Alsophila pometaria)* - The tiny inchworm larvae have just begun emerging and feeding on oak in southern Maine. Cankerworms feed on a variety of hardwoods, especially oak, elm and apple. Control applied early is more effective than waiting until most of the foliage has been eaten.

***Gypsy Moth** (*Lymantria dispar*) - Shadbush is blooming in Augusta and gypsy moth larvae are hatching here. After hatching these tiny larvae spin out on silken threads and are picked up by breezes. The lucky ones land on suitable host material. Short distance dispersal occurs by way of this "ballooning". Long distance dispersal often is the result of human activities—people unwittingly move egg masses or other life stages on articles such as RV campers, firewood and other items that are stored outside. Few egg masses were found anywhere in Maine when surveys were conducted last fall.

***Hemlock Woolly Adelgid** (*Adelges tsugae*) - Two recent events again clearly demonstrate the critical benefit we receive from our partners' efforts.

In the first instance, a vigilant nursery owner in southern Maine found a few suspicious small white masses on twigs of imported hemlock stock. He submitted samples for identification, and they turned out to be hemlock woolly adelgid (HWA). Even though the trees had been treated before being shipped to Maine, some adelgids survived treatment and hitched a ride on the trees. Although these trees were in the already-infested portion of the state, the nursery owner's vigilance and subsequent treatment insured that the current situation was not further exacerbated.

In the second instance, 25 volunteers turned out on a Mid-April day to look for HWA in Vaughan Woods Memorial State Park in South Berwick. Volunteers turned over and examined hundreds, perhaps even thousands, of yards of foliage of old and second growth hemlocks throughout the park and did not find any signs of HWA. Although the town of South Berwick is already infested, this highly treasured local site is not.

Without this demonstrated level of support from the green industry and the general public, the MFS would not have the capacity to detect low level populations sufficiently early to slow the spread of HWA. We want to thank our current cooperators for their valuable contribution and also invite any additional interested parties to become engaged in this effort. Individuals can check their trees for signs of this destructive forest pest by

examining the undersides of last year's growth for white woolly masses (ovisacs). HWA ovisacs will usually be located on the underside of the twig at the base of a needle and resemble a cotton swab. They are approximately a tenth of an inch in diameter. Directions for sampling to detect HWA in forested situations are available from the Lab and annual workshops train on identification of the insect and application of the survey methods. If you suspect you have found HWA, please contact Allison Kanoti at 287-3147.

**Larch Casebearer** (*Coleophora laricella*) - Populations of larch casebearer are lower this spring than have been seen in years. Even the trees downeast and in mid-Maine that seem to have perennial populations have lovely lush green foliage with only the occasional casebearer.

**Pear Thrips** (*Taeniothrips inconsequens*) - Pear thrip populations appear to be low with little damage observed so far this year.

**White Grubs** (various) – Does it look like a rototiller has been through your lawn? The culprit could be a predator after the white grubs that overwintered underground. Ravens and crows have been observed doing the tilling in the Bangor and Mount Desert Island area this spring. In the Augusta area, moles have been associated with the grubs. Skunks and other mammals are also known for this type of foraging behavior.

White grubs are the immature stage of scarab beetles including the native June beetles, as well as Japanese beetles, rose chafers and European chafers. June beetles are ubiquitous in Maine, and you'll often hear them bumping against your screens on spring and summer nights (especially if you have a light on). Last summer we had several people drop in with and call about the rose chafer in Midcoast Maine. Japanese beetles were also abundant, notably so around Bangor. A third beetle in the mix, the European chafer, does not do noticeable damage as an adult and adults often go unnoticed.

Larvae of all these species—c-shaped white grubs—are found in the soil and feed on plant roots. They are among the white grubs notorious for turf damage, but also will feed on crop and woody ornamental roots. Adults feed on foliage of numerous species; Japanese beetle and rose chafer damage is often conspicuous in the summer. Biological and chemical controls are available for these insects, but this is not the time of year to apply them. If necessary, adult control can be applied in summer and grub control in late summer/early fall.

***Yellowheaded Spruce Sawfly** (*Pikonema alaskensis*) - Adults will soon be active around young spruce trees. They are particularly attracted to open grown white spruce under 12 feet tall. The eggs hatch in June and most people do not notice the yellow (orange)-headed, striped, green larvae until substantial amounts of foliage have already been eaten off the tree. If you have spruce that have bare lateral branches especially near the top of the tree, check for larval feeding in June.

## ***DISEASES AND INJURIES***

**White Pine Needle Cast** *(Canavirgella banfiedii)* - A white pine needle cast was reported at high levels throughout the central and western regions of the state last year. Because the spring of 2007 was "near normal" for moisture conditions, we expect that this disease will be much less prevalent and noticeable in 2008. However, the disease is still present, and affected trees again have been noted this year in Augusta. While the disease is not a serious threat to the long-term health of white pine, the browning foliage on heavily infected trees does cause concern for homeowners and the general public. Be on the lookout for white pines that appear to be "off-color", or otherwise loosing needles and appearing thin in the crown. Also keep in mind that these

symptoms may be largely gone by late June or early July as infected needles are shed, and the new growth masks the older. No controls are recommended or required.

**Tip Blight of Hard Pines** (*Sphaeropsis sapinea [Diplodia pinea]*) - This disease has severely damaged red, Scotch, and Austrian pines (and other 2- and 3-needled pines) throughout Maine over the past several years. Wet spring weather is a primary factor in determining infection levels for serious damage, and springs with very high moisture were recorded for 2004, 2005 and 2006. Once trees become infected, the disease can persist for decades, becoming more or less severe, depending on the spring weather conditions in any particular year.

This fungus first infects young, healthy needles of new candles (new spring growth). After several years, the pathogen can grow into the twig tips, and cause stunting at the branch tips, and eventually branch death. The pathogen can also infect the cones, and on them produce abundant pycnidia, the spore-producing structures of the fungus. The infected cones then become a significant source of spores, and increase the disease intensity within an individual tree. Young trees growing near old infected trees may also become infected. Browning, stunting, and twisting of new shoots and needles are the first symptoms. The lower portions of the crown are usually the first to show dieback symptoms. During wet springs, every branch may have brown tips.

Disease management for large trees and for forest stands is largely limited to cultural practices. Removal of the most heavily infected trees, and removal by pruning of the lower, most heavily infected branches will slow the progress of the disease. Chemical fungicides are available and effective in preventing infection of new foliage when applied properly. Chemical controls are recommended only for smaller trees in ornamental settings, or for high-value plantations. At least two, and ideally three applications of the fungicide are recommended; the first at bud break (just about now in central Maine), at "half-candle" elongation (about two weeks after the first), and at "full candle" elongation (two weeks to ten days later). Effective fungicides include copper hydroxide and chlorothalonil.

**Cedar Apple Rust** (*Gymnosporangium juniperi - virginiana*) – Cedar apple rust galls may become visible on eastern-red-cedar at any time now, especially following periods of rainy weather. The galls, which appear with orange, gelatinous masses oozing from a central sphere of about ¼ inch to 1 inch in diameter, produce spores which can infect many varieties of apple and crabapple. Damage caused by infections on the apple leaves seldom warrant chemical control. Leaf spotting, with occasional premature leaf drop, is the main symptom on apple; the galls are found only on the juniper (eastern-red-cedar) hosts. The disease rarely, if ever, causes serious damage to the junipers, but the galls may appear unsightly for a short time in the spring. Pruning out the galls on the juniper hosts is the most practical and effective control for both the apple hosts and the junipers. Planting apple and crabapple varieties resistant to cedar apple rust is the best long-term solution.

**Snow Damage and Conifer Regeneration** - Observations made over the past two weeks, specifically in Aroostook County but also in central Maine, have indicated some substantial branch and stem breakage to natural and plantation conifer regeneration. This damage, the result of the heavy snow loads during this past winter, should be corrected by pruning whenever practical. Broken branches that remain alive and attached to the stem provide an ideal habitat for many secondary fungi (decays) and insects (bark beetles and others). These can then become readily established in the main stem. Removal of broken branches with proper pruning techniques can reduce this risk, and allow the trees to recover more quickly.

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